

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. SUMMARY

Plyometrics is a type of exercise training designed to produce fast, powerful movements, and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometrics movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and surrounding tissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal. Plyometrics is used to increase the speed or force of muscular contractions, often with the goal of increasing the height of a jump.

Plyometric exercises are especially useful in sports that require speed-strength. Speed strength is the ability to exert maximal force during high speed movements. Sports that require speed strength include track – and – field jumping, throwing and sprinting, volleyball, basketball, football, baseball and softball (which require jumping ability) blocking and tackling in football, and racket sports , baseball and softball (which require swinging movements). Plyometric exercise for the upper body includes medicine ball throws, catches and several types of push-ups. In depth jumps, forms of plyometric characterized by a high intensity level have been shown to

increase leg power and strength either on their own or in conjunction with resistance training. In depth jumps are performed by stepping off a box and jumping immediately upon landing. Box heights range from 0.3 m to 0.9 m with 0.5 being the norm for many athletes. Athletes weighing over 100 kg should not perform in depth jump from over 0.5 m.

The ability to rapidly apply force (reaction force) is the major goal of plyometric training. Plyometric tests are used to apply an overload to the muscles with speed strength as a goal. Plyometrics should not be considered as an end in themselves, but part of an overall programme (stretching, running, strength training, nutrition etc.). After the athlete has begun a proper strength and conditioning programme, plyometric exercise are used to develop speed strength.

Plyometric training is a very popular and effective organization form of doing physical exercise. In plyometric training number of exercises are done in the form of jumping. It can be used for the improvement of technical and tactical elements or for the improvement of conditional abilities. But it is shown that plyometric training is particularly effective for improvement of the speed and strength abilities.

The following are therefore identified as the main adjectives of the study.

- 5 To impart and identify the effect of plyometric training among university and college level sports men.
- 6 To determine the optimum requirements of plyometric training for the best performance by varying the intensities and frequencies in order.
- 7 To study the changes in the selected dependent variable of the study.

The main purpose of the study was to find out “effects of varied intensity and frequency of plyometric training on selected anthropometric (Body weight, chest girth, thigh girth, calf girth, biceps girth) , physiological(Resting heart rate, VO_2 max, anaerobic capacity) and psychological variables (Achievement Motivation and Anxiety) among college men students

One hundred and twenty college men students undergoing degree courses in Tirumala Tirupati Devasthanam (T.T.D) constituent Degree Colleges, Tirupati, Andhra Pradesh were selected as subjects at random and divided into four groups. To accomplish the objective, four training programme were formulated, in the study. (a) 80% intensity with 4 days frequency, Experimental Group I (b) 80% intensity with 2 days frequency, Experimental Group II (c) 70% intensity with 4 days frequency and Experimental Group III (d) 70% intensity with 2 days frequency Experimental Group IV. The four experimental groups were progressively introduced in the ten (10) dependent variables, were compiled before the

commencement of the six weeks experimental study and after six weeks of respective training.

The subjects' selection and assignment were at random. The subjects were not equated in relation to the factors in which they were examined. Hence the differences among the means of pre-test scores were taken into account during the analysis of post-test differences among the means. This was achieved by analysis of covariance, where the final means were adjusted for the differences in the initial means and the adjusted means were tested for significance. Wherever significant, Scheffe's post-hoc test was applied to determine the significance of paired means differences, the level of significance being fixed at 0.05 levels.

5.2. CONCLUSIONS

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were arrived at:

1. a) 80% intensity with 4 days frequency
- b) 80% intensity with 2 days frequency
- c) 70% intensity with 4 days frequency and
- d) 70% intensity with 2 days frequency of

Plyometric training improved selected anthropometric variables such as Body weight, calf girth, biceps girth , physiological variables

such as Resting pulse rate, VO_2 max and anaerobic capacity and psychological variable such as Achievement Motivation among college men students in Andhra Pradesh.

2. 80% intensity with 4 days frequency of plyometric training improved the selected anthropometric variables such as Body weight, calf girth, biceps girth, physiological variables such as Resting pulse rate, VO_2 max and anaerobic capacity and psychological variable such as Achievement Motivation greater than 80% intensity with 2 days frequency, 70% intensity with 4 days frequency and 70% intensity with 2 days frequency among college men students in Andhra Pradesh.
3. 80% intensity with 2 days frequency of plyometric training improved the selected anthropometric variables such as Body weight, calf girth, biceps girth, physiological variable such as Resting pulse rate, VO_2 max and anaerobic capacity and psychological variable such as Achievement Motivation greater than 70% intensity with 4 days frequency and 70% intensity with 2 days frequency among college men students in Andhra Pradesh.
4. 70% intensity with 4 days frequency of plyometric training improved the selected anthropometric variables such as Body weight, calf girth, biceps girth, physiological variable such as Resting pulse rate, VO_2

max and anaerobic capacity and psychological variable such as Achievement Motivation greater than 70% intensity with 2 days frequency among college men students in Andhra Pradesh.

5. The varied intensities and frequency of plyometric training did not improve chest girth, thigh girth and anxiety among college men students in Andhra Pradesh.

5.3. RECOMMENDATIONS

1. On the basis of the finding of the study it is recommended that 80% intensity with 4 days frequency, 80% intensity with 2 days frequency, 70% intensity with 4 days frequency and 70% intensity with 2 days frequency of plyometric training could be utilized as useful methods of improving the selected anthropometric variables such as Body weight, calf girth, biceps girth , physiological variables such as Resting pulse rate, VO_2 max and anaerobic capacity and psychological variable such as Achievement Motivation among college men students in Andhra Pradesh .
2. 80% intensity with 4 days frequency of plyometric training is the best method of improving the set of Anthropometric, physiological and psychological variables than that of 80% intensity with 2 days frequency, 70% intensity with 4 days frequency and 70% intensity with 2 days frequency.

5.4. SUGGESTIONS FOR FURTHER RESEARCH

1. The same study may be conducted for college women students.
2. This study may be followed up with increased intensity and frequency of training.
3. Similar study may yield significantly higher response from parameters, if conducted with longer training programme.
4. A similar study can be conducted among school children, and men and women students of various universities.